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L2: Entry 1 of 2

File: EPAB

Feb 26, 1992

PUB-NO: EP000471987A1

DOCUMENT-IDENTIFIER: EP 471987 A1

TITLE: Process and apparatus for the preparation of very pure 1,2-dichloroethane with heat recovery.

PUBN-DATE: February 26, 1992

## INVENTOR-INFORMATION:

NAME

RECHMEIER, GERHARD DR

COUNTRY

DE

## ASSIGNEE-INFORMATION:

NAME

HOECHST AG

COUNTRY

DE

APPL-NO: EP91112153

APPL-DATE: July 20, 1991

PRIORITY-DATA: DE04026282A (August 20, 1990)


US-CL-CURRENT: 570/247

INT-CL (IPC): C07C 17/02; C07C 19/045

EUR-CL (EPC): C07C017/02

## ABSTRACT:

CHG DATE=19990617 STATUS=O> A process is described for the preparation of very pure 1,2-dichloroethane with heat recovery from equimolar amounts of ethylene and chlorine in 1,2-dichloroethane as solvent in the presence of a tetrachloroferrate(1-) catalyst at a temperature of 75 to 200 DEG C and a pressure of 1 to 15 bar in a reaction zone, which is characterised in that the chlorine gas is dissolved in circulating 1,2-dichloroethane in a mixing zone provided upstream, the ethylene gas is reacted in the reaction zone provided downstream in a finely dispersed liquid phase having a bubble diameter of at most 2.0 mm, this finely dispersed liquid phase is allowed to flow through the reaction zone with a speed of 0.3 to 1 m/s with a residence time of 2.5 to 25 seconds, calculated on the liquid phase, and the very pure 1,2-dichloroethane formed, which contains less than 500 ppm of chlorinated by-products, is withdrawn in the gaseous phase via a flash evaporation. A suitable apparatus for the preparation of very pure 1,2-dichloroethane is composed of a mixer 1 having a chlorine inlet 11, a "static mixer" 2 having an ethylene inlet 5, a flashing vessel 3, a circulation pump 6 and a heat exchanger 7, the mixer 1, the "static mixer" 2, the flashing vessel 3, the circulation pump 6 and the heat exchanger 7 being joined together in a flow-connected manner, the flashing vessel 3 being joined via a throttle valve 4 to a condenser 8, and a product discharge line 9 and an exhaust gas line 10

exiting from the condenser. 

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWC	Draw. Desc
Image												

2. Document ID: EP 471987 A HU 212465 B DE 4026282 A HU 58675 T NO 9103237 A  
ZA 9106491 A JP 04261125 A NO 173602 B EP 471987 B1 DE 59100802 G RU 2015955 C1

L2: Entry 2 of 2

File: DWPI

Feb 26, 1992

DERWENT-ACC-NO: 1992-066243

DERWENT-WEEK: 199643

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TITLE: Prodn. of high purity 1,2-di:chloroethane with heat recovery - by reacting ethylene and chlorine in static mixer

INVENTOR: RECHMEIER, G

PATENT-ASSIGNEE:

ASSIGNEE

CODE

HOECHST AG

FARH

PRIORITY-DATA: 1990DE-4026282 (August 20, 1990)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<u>EP 471987 A</u>	February 26, 1992		000	
HU 212465 B	July 29, 1996		000	C07C019/045
DE 4026282 A	February 27, 1992		000	
HU 58675 T	March 30, 1992		000	
NO 9103237 A	February 21, 1992		000	
ZA 9106491 A	May 27, 1992		010	C07C
JP 04261125 A	September 17, 1992		004	C07C019/045
NO 173602 B	September 27, 1993		000	C07C019/045
<u>EP 471987 B1</u>	January 5, 1994	G	006	C07C019/045
DE 59100802 G	February 17, 1994		000	C07C019/045
RU 2015955 C1	July 15, 1994		004	C07C019/045

CITED-DOCUMENTS:DE 3445896; EP 111203 ; EP 80098

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
EP 471987A	July 20, 1991	1991EP-0112153	
HU 212465B	August 17, 1991	1991HU-0002749	
HU 212465B		HU 58675	Previous Publ.
DE 4026282A	August 20, 1990	1990DE-4026282	
ZA 9106491A	August 16, 1991	1991ZA-0006491	
JP 04261125A	August 19, 1991	1991JP-0206866	
NO 173602B	August 19, 1991	1991NO-0003237	
NO 173602B		NO 9103237	Previous Publ.
EP 471987B1	July 20, 1991	1991EP-0112153	
DE 59100802G	July 20, 1991	1991DE-0500802	
DE 59100802G	July 20, 1991	1991EP-0112153	
DE 59100802G		EP 471987	Based on
RU 2015955C1	August 19, 1991	1991SU-5001303	

INT-CL (IPC): B01J 27/128; C07B 61/00; C07C 17/00; C07C 17/02; C07C 19/04; C07C 19/045

ABSTRACTED-PUB-NO: EP 471987A  
BASIC-ABSTRACT:

Process is for prodn., with heat recovery, of highly pure 1,2-dichloroethane (1,2-DCE) contg. less than 500 ppm chlorinated by-prods., involving reaction of equimolar amts. of ethylene and Cl<sub>2</sub> in 1,2-DCE as solvent at 75-200 deg.C/1-15 bar using a tetrachloroferrate (1) catalyst.

The Cl<sub>2</sub> gas is dissolved in circulating 1,2-DCE in a mixer. The ethylene is fed in at a subsequent reaction zone to give finely dispersed bubbles of max. dia 2.0 (esp. below 1.5) mm, with this fine dispersion flowing through the reaction zone at 0.3-1 m/sec for a dwell time of 2.5-25 secs. The highly pure 1,2-DCE is flash evaporated and drawn off in gas form.

The appts. comprises, connected in the order given, mixer (1) with a Cl<sub>2</sub>-inlet (11), a static mixer (2) with an ethylene-inlet (5), release vessel (3), circulation pump (6) and a heat-exchanger (7), the release vessel (3) connected via a valve (4) to a condenser (8) which has a prod. outlet (9) and an exhaust gas outlet (10).

USE/ADVANTAGE - Highly-pure prod. is obtd. which does not require to be distilled. The large multi-stage reactors of the type used in EP--80098 (CA 1221708) are not required, the appts. used here coping with the fact that the ethylene dissolution is the rate-determining step and also giving good heat recovery.

ABSTRACTED-PUB-NO:

EP 471987B

EQUIVALENT-ABSTRACTS:

A process for preparing high-purity 1,2-dichloroethane with heat recovery from equimolar amounts of ethylene and chlorine in 1,2-dichloroethane as solvent in the presence of a tetrachloroferrate (1-) catalyst at a temperature of 75 to 200 deg.C and a pressure of 1 to 15 bar in a reaction zone, which process comprises dissolving the chlorine gas in recirculating 1,2-dichloroethane in an upstream mixing zone, reacting the ethylene gas in finely disperse liquid phase having a bubble diameter of at most 2.0 mm in the downstream reaction zone, allowing this finely disperse liquid phase to flow through the reaction zone at a rate of 0.3 to 1 m/s with a residence time of 2.5 to 25 seconds, calculated relative to the liquid phase, and then removing the high-purity 1,2-dichloroethane formed, which contains less than 500 ppm of chlorinated byproducts, in gaseous form by flash evaporation.

CHOSEN-DRAWING: Dwg.1/1 Dwg.0/1

TITLE-TERMS: PRODUCE HIGH PURE DI CHLOROETHANE HEAT RECOVER REACT ETHYLENE CHLORINE  
STATIC MIX

DERWENT-CLASS: E16

CPI-CODES: E10-H02H; N04-D01;

CHEMICAL-CODES:

Chemical Indexing M3 \*01\*

Fragmentation Code

H6 H602 H608 H681 H689 M280 M312 M321 M332 M342

M363 M391 M416 M620 M720 M903 M904 M910 N104 N213

N309 N322

Specific Compounds

00811P

Chemical Indexing M3 \*02\*

Fragmentation Code

A426 A760 A940 A980 C017 C730 M411 M730 M903 Q421

UNLINKED-DERWENT-REGISTRY-NUMBERS: 0326S; 0811P ; 1781S

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C1992-030340

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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